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COMPUTER WEEKLY

ICL to allow 2900s to run VME and DME simultaneously

USERS of ICL 2900 systems could make considerable hardware savings following the introduction of "time slicing" firmware currently under development by ICL that will enable either of the VME operating systems to run simultaneously with DME on the same machine. The facility is expected to be introduced next year.

If ICL can make such a system work efficiently it would represent a major advance in computer design, because it would provide ICL users with similar facilities to those offered by IBM's VM/370 operating system, but under much more difficult circumstances.

Under VM/370, two or more IBM operating systems can run side by side on the same machine, but all the operating systems use the same 370 instruction set.

In order to run a VME and a George operating system side by side on the same machine, it would be necessary to have both the 2900 and the 1900 instruction sets resident simultaneously. Main store would be unlikely to be shared between the two operating systems, but most of the peripherals could be shared.

Meanwhile ICL now appears to be getting its VME/K act together after several years of troubled development. The major rewrite, KSV 16, sometimes known as "Son of K" is now on controlled release and the next version, KSV 17, is due for controlled release in June and general release by the end of the year. KSV 17 will offer "advances in data management and teleprocessing" in addition to support for IDMS and TPMS.

Some VME/K users believe that KSV 17 will be the first version of K to be pushed heavily by ICL and that the next release, KSV 18, will offer better communications facilities than VME/B.

In 1976 ICL introduced the emulation KMEEP to ease conversion to VME/K.

Anti-trust settlement talks snag

TALKS between IBM and the Justice Department on an out-of-court settlement of the US government's anti-trust suit against the company have stalled, suggesting that the predicted settlement by June in the 10-year-old suit is now unlikely.

The Justice Department has stated publicly that only divestiture — a break-up of the company — would satisfy the government and IBM says this is unacceptable.

DAP for BNOC

THE first commercial user of ICL's Distributed Array Processor is the British National Oil Corp. The DAP will be installed this year and used with a 2976 ordered last year as part of a deal under which ICL and the corporation would develop 2900 software for the oil industry (CW, June 21, 1979).

Easy-to-use software on rivals to IBM's System 38

● From front page

discs integrated with the processor. The tape deck from the BC/7 small business computer is offered with System 80. There is also a new floppy disc drive.

Most important features of the new Release 7 of the OS/3 operating system are support for the Escort applications development language previously unique to the BC/7 and utilities to give the operating system an interactive, transaction processing work station orientation.

There are no new instructions in the System 80 set, unlike the ICL ME29, which adds to the 2903 set. The new release of OS/3 features language enhancements for work station operation, a dialogue processor, 14 job partitions, a single file access method for flat, sequential and indexed sequential files and an interactive system generation facility.

With a price of under £50,000 for 256K-byte processor, floppy drive, one fixed disc, combined operator and maintenance console and workstation and a line printer, the System 80 starts rather higher than the ICL or Honeywell machine.

The Honeywell DPS 4, which extends and takes over from the Italian Level 62, features a new multiple-processor achitecture and new operating system, GCOS 4.

A DPS 4 system can have up to three CPUs, one or two unit record/console processors, one or two disc processors, one or two main memory processors and up to three network processors.

Minimum configuration with one of each of the first three types of processor, 256K-bytes of memory, 56-megabytes of fixed and exchangeable disc storage, console, two work stations and printer costs just under £30,000.

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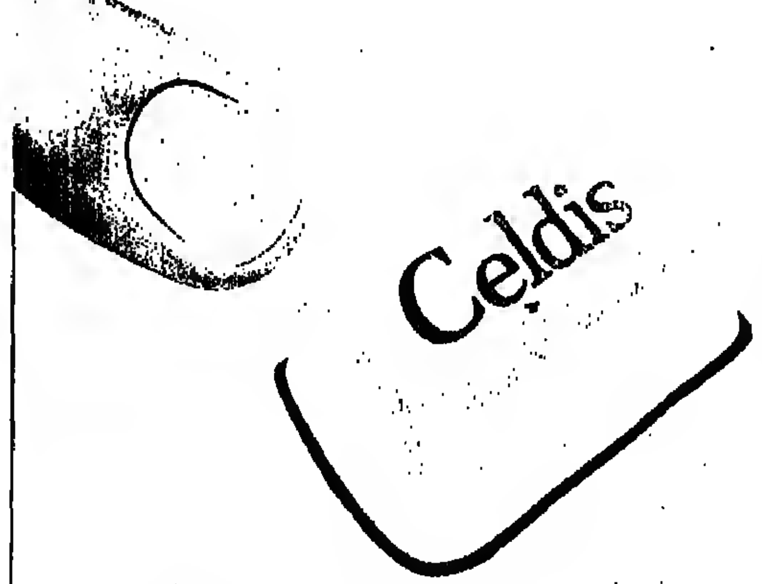

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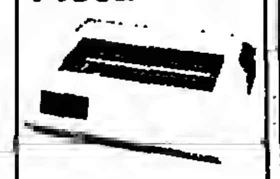
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Govt cuts NCC funding

THE Department of Industry is cutting its funding of National Computing Centre projects from 100% to 50%. The move is seen by the government as bringing NCC support into line with the 50-50 funding of projects with private industry and research associations.

Government support for the NCC comes in the form of development contracts from the Computers, Systems and Electronics Requirements Board. In 1978-79 this support was £1,3 million, or 30% of the NCC's total income.

"The new policy will not affect us too strongly this year but will have a significant impact next year and become critical the year after," said David Fairbairn, the NCC's new director. "This year the 50% funding will apply to between 15% and 20% of our government-backed activities. Next year it will apply to well over half and after that to all projects. In the 1980-81 financial year government funds will be less than £900,000. Things will be tight but not impossible."

Fairbairn said that as it was not a profit-making organisation the NCC could put any profit it made — last year it was £82,000 after tax — back into development. "Our products and our work in training give us a good, steady cash flow," he said. "That gives us some elbow room. But we will certainly be looking for multi-client work and we are going to tap EEC funds fairly strongly."

Fairbairn said government funds could come from other sources for training and helping small businesses introduce computers: "I am particularly keen to look at the micros market. But I believe we will not be able to do enough without more government help. I believe the Department of Education and Science could increase teacher training in this area — we could help here. And the Department of Industry has schemes for helping small businesses."

The NCC has been accused of competing with its own members by selling its products. Would this "competition" increase with the funding cuts? "There's a need for software like Filetab which can run on a wide range of machines," said Fairbairn. "There is a need for the NCC to take on this industry-wide software role.

...SF may sell ...chi M170

...the German chemicals and IBM-compatible ...rals manufacturer, is ...stood to be talking to ...of Japan about selling ...latter's M170 IBM-...tible processor, which is ...381 class. Hitachi's M160 ...200 are already sold in ...pe by Nasco and Olivetti.

French take minority stake in Olivetti

THE French industrial group, St Gobain-Pont-à-Mousson, is acquiring a large minority shareholding in Olivetti as part of its strategy to diversify into the computer business.

Early this year, St Gobain took a 20% holding in Compagnie des Machines Bull, the holding company for the 53% French stake in mainframe supplier CII-HB (CW, January 24).

Troubled issue

...apologise to readers and ...tisers for the unusual format of this week's Computer Weekly. It is caused by industrial action by members of the National Union of Journalists.

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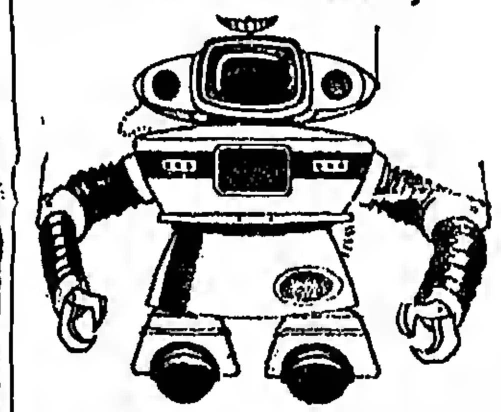
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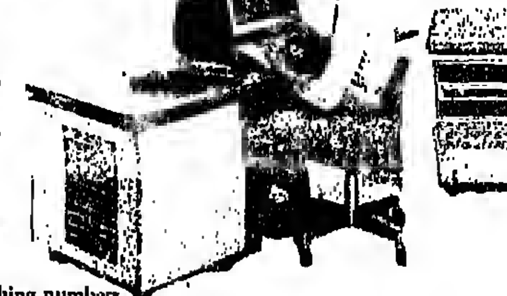
The Computer Professionals

HP introduces the Matrix Machine.



If you've been thinking that only a 32-bit computer can handle your matrix inversion jobs, think about this: with HP's new Vector Instruction Set (VIS), the HP 1000 does matrix inversions at speeds comparable to a 32-bit mini. At less than one third the price.
The HP 1000 F-series computer has always been ideal for complex scientific calculations involving floating point arithmetic, trigonometric and logarithmic functions, and other computation-intensive problems. Now it's even better.
With VIS, you can perform vector and matrix arithmetic at speeds you wouldn't have thought possible on a 16-bit computer. A single vector addition statement like CALL VADD, for example, replaces a FORTRAN DO loop to execute some applications up to 10 times faster.
And by taking advantage of the HP 1000's Extended Memory Area, VIS can address extremely large data sets (up to 1.8 megabytes) in main memory. All array and memory management tasks are handled automatically, so you can do large array applications like image processing, 3-dimensional graphics, and simulations. Without writing any new software.

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For complete information about the VIS-enhanced HP 1000 ring your nearest Hewlett-Packard office or contact Hewlett-Packard Ltd., King Street Lane, Winnersh, Wokingham, Berks., RG11 5AR. Telephone: Wokingham (0734) 784774.

Matrix Inversion Times**

Size	HP 1000 VIS-enhanced F-series	32-bit Mini-computer
50x50	1.8 sec	1.5 sec
100x100	12.3 sec	11.7 sec
200x200	105 sec	92 sec
400x400	810 sec	720 sec

**Benchmark method – Matrix inversion using Gauss-Jordan Elimination.

*Prices correct at time of going to Press.

HEWLETT PACKARD

UK electronic mail trials this year

ELECTRONIC mail trials in the UK are to start this year and the Post Office expects a national service to be set up at the end of next year or early in 1982. More shape was given to the Post Office's plans for electronic mail (CW, December 13, 1979) at Communications 80 in Birmingham last week, where three VDUs were used to demonstrate the user interface, which the Post Office regards as the most important part of the system.

The trial will be based on the Racal-ESL 1044 communications controller running file management software from Telepost Systems. About 150 ATS Vitel VDU terminals will be installed by a few large companies which are co-operating in the trial, with printers, floppy disc units and cassette recorders as options.

The CCITT teletex standard will be added to the interfaces when it is published. It is expected to be finalised at the CCITT plenary session in November. Teletex terminals will be purchased for the service from Siemens and ITT, which have already been contracted to produce bulk supplies for the planned Swedish and German services. Meanwhile the system is designed to use the telephone network, especially at night, and the telex network. Four terminals sharing a line is expected to be typical and a terminal is expected to cost around the same as a telex machine, at £500.

Briefing

DPS 8 range filled out

HONEYWELL has now formally launched the three less powerful members of the DPS 8 mainframe in this country. Called the DPS 8/52, 8/44 and 8/20, they were introduced in the US last year along with the top-end 8/70 machine (CW, October 18, 1979). The 8/52 and 44 match the IBM 3031 and 4341 in performance, respectively, while the 8/20 offers twice the power of an IBM 4331. The DPS 8 family replaces the Level 66 line.

System X date

OPERATION of the first System X exchange is now scheduled for July, six months ahead of the date announced in 1078 and two years ahead of the date planned five years ago. The exchange will be sited at Baynard House in the City of London and will link 40 local exchanges to each other and to the trunk network. The first local exchange is planned for Woodbridge, Suffolk, at the end of the year, bringing short-code dialling and call diversion as the first of the range of new customer services, as well as guidance in using them supplied by synthesised voice messages.

ME29 facility

DESPITE discouraging answers from ICL whenever the company is questioned on the matter, industry sources insist that ICL is working on some kind of System Ten emulation facility on the ME29 successor to the 2903 series.

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Barlow to quit Post Office in the autumn

POST Office chairman Sir William Barlow announced last week that he would resign in the autumn. Industry Secretary Sir Keith Joseph spoke in the House of Commons of his great regret at Sir William's decision and of his warm appreciation of Sir William's leadership in speeding up the introduction of Prestel and System X and in preparing the management structure for the split between Telecommunications and Posts. He had hoped Sir William would become the chairman of British Telecommunications.

Sir William has been chairman of the Post Office since November 1977, when he came from private industry which he said he prefers for its cut and thrust of competition. He is believed to have pushed hard for further borrowing powers to sustain current growth in telecommunications. Cash limit problems are shared by other state corporations and last month Sir William became chairman of the Nationalised Industries' Chairmen Group, hoping to persuade the government to relax cash limits generally.

He was in favour of the government's plans to liberalise the subscribers' equipment market but strongly against the possibility of private companies being able to offer third party services on lines they leased from the corporation because it would undermine investment by drastically reducing earnings.

A chairman has yet to be found for British Telecommunications. Chairman designate of Posts and Giro is Ron Dearing, who will come from the Department of Industry on May 1.

Lloyd's suffer setback in leasing lawsuit

LLOYD'S of London has suffered a serious setback in the lawsuit initiated last year by Federal Leasing of McLean, Virginia, under which Federal is seeking $830 million from Lloyd's underwriters (CW, June 28, 1979). The presiding judge at the Baltimore Federal District Court has ordered Lloyd's to come to an agreement with Federal by May 2 on an interim payment by Lloyd's to prevent the leasing firm from going bankrupt.

This action has been demanded by Federal for some time because of its highly precarious financial position which is largely the result of Lloyd's underwriters not paying Federal's claims under the "J" policies written by them on Federal's lease portfolio of IBM machines. The Lloyd's underwriters have alleged in their defence that the Federal claims were fraudulent.

Judge Harvey at the Baltimore court has rejected Lloyd's allegations and has said that Federal has a high probability of ultimate success in the case.

Norsk Data 'take-over'

RICHARD Norton (Nord) is no longer, and in its place is Norsk Data — but customers of the Norwegian minimaker will find that little has changed apart from the name.

Norsk Data always intended to take over its UK distributor, and only went for an agency agreement to start with because with new companies formed in France and Germany at about the same time it felt that a third would overstretch its resources.

Beneficiaries of the takeover are the directors of the former company, who all remain directors of Norsk Data.

Norsk Data reports that 16 of its powerful multi-purpose minicomputers are now installed in the UK, with about the same number on order.

Key feature of the Norsk Data product line is the Sintran III operating system, which was designed from the ground up as an all-purpose system. The company offers two principal products, the Nord-100 16-bit mini and the Nord-500 32-bit processor, which runs only as a back-end to the 16-bit machine.

Globally, Norsk Data has reported that turnover rose 30% to about £18 million with 50% of the business being done outside Norway. At 7% profit margins were the best in the company's history.

Micro-based WP system

A STAND-ALONE word processor based on the 16-bit Intel 8086 microprocessor has been developed by Logica and is to be sold by the National Enterprise Board's office systems venture, Nexos, as the 2200.

The controlling software occupies 128K-bytes of the 256K available. All routines are resident in memory rather than accessed from minifloppy discs.

The 2200 was unveiled to dealers at the Hanover Fair last week. Selling to end users will start in September.

Documation loses $10m

IBM-COMPATIBLE printer manufacturer, Documation, has revealed that it lost more than $10 million in the fourth quarter, ended February 1, of its 1980 fiscal year. Documation earlier this year reported a $3 million pre-tax loss in its 1980 third quarter and also announced big changes in its senior management (CW, February 14). Now Documation founder, Ray Halbert, has been replaced as chairman by Boston lawyer, Richard Testa. In addition about 130 manufacturing and engineering employees have been laid off.

Documation made an overall loss in fiscal 1980 of $9.5 million compared with a profit of $6.4 million in fiscal 1979, but its turnover rocketed by 53% to more than $90 million in fiscal 1980. Documentation attributes its losses to expansion costs, including the cost of building its plant in Eire.

Burroughs CP9000 launched in UK

BURROUGHS' CP9000 series, the range of communications processors introduced in the US in January (CW, January 24, 1980) has now been launched in the UK.

Ten of the CP9400 and CP9500 models have already been sold and the system is available immediately. The series is designed to interface with a variety of other manufacturers' mainframes and will interface and control the transfer of data between points within any remote or distributed processing operation to form large scale communications networks.

A typical CP9500 system with 384K-bytes of main memory would cost about £22,000. A version of the system is to be used in Nato's Scars project (CW, April 3, 1980).

IBM borrows more . . .

HAVING tapped the US bond market and the Saudi Arabian central bank, IBM continues its borrowing spree in Europe, where interest rates are lower. The company has borrowed the equivalent of $277 million in West Germany and Switzerland over six years at rates between 6% and 10%.

Like the previous borrowings, which stood at over $1,800 million, the new money is to be spent on financing leases and plant expansion and as working capital.

. . . and gains too

FILLING out the IBM picture, IBM Japan has reported net profit for 1979 up 5.1% at £65.8 million, on turnover up 2.8% at £589 million. Exports accounted for £104 million of this, and were up 26.3% over 1978. New investment rose 46.8%. IBM has substantial manufacturing capacity in Japan, including large systems, and most of the exports go to other Far Eastern Markets.

Gala college opts for move to 4331

THE Scottish College of Textiles in Galashiels is to become the first educational establishment to install an IBM 4331 when it replaces its ICL 1900 with the new machine in the next two weeks.

The college said the move up to a more powerful system was long overdue since the ICL 1900 was obtained second-hand from Paisley College six years ago when it was already seven years old.

A budget of just over £100,000 was made available for the purchase of a new machine and this attracted 12 tenders, which were reduced to ICL, Digital Equipment, IBM and Prime.

ICL tendered a 2904/50, DEC tendered a PDP-11/70 but then offered a VAX 11-780, IBM offered the 4331 and Prime a P550.

"Prime and IBM were very impressive in terms of their software interactive capabilities but we felt the IBM 4331 came out better," said the college. "In a way all ICL was offering was an extended 1900 system and the company, unlike the others, would not let us do our own benchmark tests on the 2904."

Applications currently run include online computing facilities for local schools, a Higher National Diploma data processing course and the generation of textile patterns on VDUs which are then transferred to paper tape and fed into weaving looms. The college also maintains the World Textile Abstracts Database produced by the Shirley Institute in Manchester.

● Switching from its ageing Elliot 4130 system, the University College of Wales, Aberystwyth, is to install a refurbished and upgraded Honeywell 6080. Valued at about £400,000, the Honeywell system has 256K of cache memory and five 100-megabyte disc drives. It will be able to support up to 80 terminals and offer a far greater range of software.

Japanese go it alone

REPORTS from Japan indicate that government efforts to encourage computer manufacturers to collaborate have been less than successful.

The $400 million four-year programme to research very large scale integrated circuitry has come to an end, but it appears that each of five companies involved — NEC, Toshiba, Fujitsu, Hitachi and Mitsubishi — remained very much at arms' length from each other.

Each of the projects is reported to have been carried out by a team drawn largely from just one of the companies, bringing their own technology with them to the joint laboratory in Kawasaki, and now taking it back to their own companies.

MITI is still encouraging Nippon Electric and Toshiba on the one hand and Fujitsu, Hitachi and Mitsubishi on the other to come closer together, but while this has been fairly successful in the former case, Fujitsu and Hitachi, nominally partners in the M-series of IBM-compatible mainframes, are in reality fierce competitors.

Mitsubishi, which builds the Cosmo series of smaller mainframes based on Xerox licences, is planning to join the other two as a third supplier of IBM-compatible machines.

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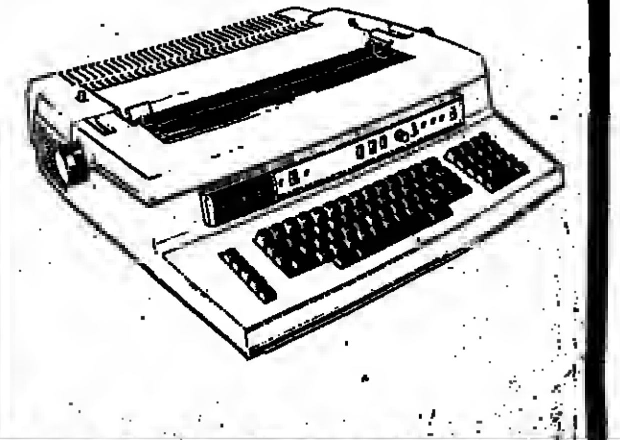

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PRODUCT NEWS

Matrix printer with five solenoids

A MATRIX printer uaing five 12 volt DC printing solenolds that are oscillated across the paper with a rail cam, has been introduced by Datac of Altrincham, Cheahlre. It is called the DMI-40, and printing is done a row of dots at a time. A line of cha-rscters requiras seven carriage paases for printing and two additional passea for the line space. Datac says the total cycle time per line of output ia 0.5 seconds.

The poaition of the carriage and the firing of each aolenold ia established from a slotted atrip that is straddled by a photo tranaistor and LED. Datac claims the DMI-40 prints any aize fount or graphics with tho uacr'a own electronic drive circuitry.

Optionai alectronic drive circuitry will print 96 characters Ascll code (parallel and serial, RS 232C inputs) in a 9 x 7 matrix fount at 10 characters per Inch and 6 lines per Inch as well as graphics.

It runs on 12 voits DC, costs £139 each, printa obout 120 lines per minut a.

Datac Ltd (CW), Tudor Rosd, Broadhaath, Altrinchsm, WA14 5TN. Tel: 061-941 2361.

Disc system for CDC kit

A DISC aub-systam that ls capable of handling up to 16 drives on each controller on Control Data'a 3300 and 3500 systems la avallable from Advonced Computer Techniques.

The sub-system ls connected to the host computor vio CDC communicatione channels and interfaccs with the master operating ayatam through an ACT supplied driver.

Advanced Computar Techniques Carp (CW), 1,501 Wilson Boulavard, Arlington, Virginia, 22209. Tal: (0101-703) 524 8330.

Keeping dirt at bay

SPECS of dirt have oeen known to cauae mechina failure. To help combat this problam, Data Efficiency has produced a renge of duat covers.

The covers ara made from opaque vinyl with an amboased taffeta finish. Data Efficiancy saya that all tha aeams are machina stitched and a cut-out in the back allowa for the routeing of powar and control cablea.

They coat £9.95 each.

Data Efficiancy Ltd (CW), Mexted Road, Maylands Avenue, Hemel Hempstead, HP2 7LE. Tel: 0442 57137.

Aoouetic cover for IBM 2740s and 2741s

USERS of the IBM 2740 or 2741 communications terminals can now buy an acouatic encloaure which surrounds the terminals and la said to reduce emitted noise by 60%.

Mode by The Powar Equipment Co, It is manufactured from matal, lined with noise-absorbing foam, and is available either in mlat grey or oatmeal.

Power Equipment saya the cover can be fitted in about fiva minutea and a platen and a ploten extension kit la suppllad to allow the platan to be operated from outside tha enclosure.

Input and output slots are cut into the back section for the free paaaage of continuous stationery. The front aection ls made in clear heavy-duty acrylic. The lower section falls back for access to the keyboard and the front lifta off on friction hingea for paper changes.

Tha Powar Equipm int Co Ltd (CW), Kingsbury Road, London, NW9 8UU. Tal: 01-205 0038.

16-bit single board analogue interface

FROM Di-an Dotn Systems are high resolution 14-bit and 16-bit single board analogue interface systems that are hardware and software compatible with the Digital Equipment PDP-11 minicomputer backplane.

These DEC standard hex-height boards feature a choice of eighter 14-bit or 16-bit analogue to digital conversion for applicationa requiring higher reaolution than from standard 12-bit boards, says Di-an.

Regardless of resolution, all analogue input and input/output systems are availsble with full-expandable multiplexer inputs with eight differential channels for low level applications or 16 single ended channels for high leval applications.

Both versions are available with an optional aoftware programmable gain amplifier, which is offered in two levels of performance. The PGH option is designed for high level application and provides digitslly aelected gains of one, two, four and eight.

The PGL option is utilised in low level, wide range systems and provides software programmable gaina of one, 10, 100 and 500.

The boarda use a fixed configuration local bus callsd Translate-Bus. This allows direct Interchange between any Datax 11 data acquisition modules that offer a wide spectrum of performance ranges.

Di-an Data Systems Ltd (CW), Mersey House, Battersea Road, Heaton Marsey, Stockport, SK4 3EA.

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Pocket terminal for digital diagnostics

A POCKET terminal with an increaaed range of signalling speeds that can be used as a test and diagnostic tool for digital systems has been introduced by GR Electronics of Newport, Gwent.

Called Model RS, it will send and receive Ascii code at 300, 600, 1,200 and 2,400 baud with an alphanumeric dispiny on eight 16-segment LEDs of the last 30 characters received.

Housed in a 150×80×35mm case, the terminal has 40 positive responae kaya, allowing 128 Ascii codes to be keyed in and transmitted as 8-bit words with selectable parities and start and stop bits, says GR Electronics.

It is available in 20 milliamper RS 232C level versions with alternative 25-way "D" type 7-pin connectors. GR Electronics adds that it could be used as a low-cost alternative to traditional terminal equipment and to replace purpose-built keyboard equipment in system control applications.

GR Electronics Ltd (CW), Fairoak House, Church Road, Newport, NP5 7EJ. Tel: 0633 214147.

Guide to Intel Systems Implementation Supervisor

FROM Rapid Recall is a pocket guide to the Intel Systems Implementation Supervisor (Isis-11) and a bi-monthly newsletter called RRI. Isis-11 is a disc operating system for Intellec microcomputer development systema that provides a software interface to the disc drive and to any other standard peripheral devica. The guida includes the Isis-11 control charactars, command syntax, monitor commanda and error messages.

The newsletter is dasigned to be of interest to anyone concerned with microprocesaora or memories and also contains details of stocks, new products and tachnical design notes. It ia free to engineers ond buyers.

Rapid Recall Ltd (CW), 6 Soho Mills, Wooburn Industrial Park, Wooburn Graen, Bucka. Tal: Bourne End (062 85) 24961.

Colour brochure

GEC Semiconductora haa publiahad a 14-paga four-colour brochure about its Calimoa tailor-made larga acale aamiconductor integration service.

GEC Samiconductors Ltd (CW), East Lana, Wembley, HA9 7PP. Tel: 01-904 9393.

Catalogue

PROCESS control equipment manufacturer Taylor Instruments of Stevenage, Herts, has published a catalogue that lists and illustrates its range of analogue, digital and anslyticsl instruments and computer control aystems.

Taylor Instrumaats Ltd (CW), Gunnala Wood Road, Stevenage, SG1 2EL. Tel: 0438 2366.

Diskette files

A RANGE of diskatta filing systema has baen launched by CBM Data Softwara. The systems contain rotary and desk stands, fan filing and suspension filing and are all manufactured using anti-static materials.

CBM Data Softwara Ltd (CW), Old Coach House, The Craacent), Belmont, Sutton, SM2 6BP. Tel: 01-642 9471.

Alphanumeric printers

TWO ranges of alphanumeric printers from Digitec are now available in the UK from Aviquipo of Maidenhead, Berks.

Designated the 6300 and 6400 series, these micro based printers provide 64 different characters in a 5 x 7 Ascii-controlled dot matrix. They can also print in bold letters.

The RS 232C and 20 milliamp current loop interfaces are switch selectable, says Aviquipo. The company adds that some models provide a selection of data rates from 110 to 1,200 baud.

Aviquipo of Britain Ltd (CW), St Peter's Road, Maidenhead, SL6 7QU. Tel: 0628 34585.

BOOKS

Wanted—a watchdog on poor DP practice

Effective Mathods of EDP Quality Assurance, by William Perry. 347 pp. £16.00. Online Conference Ltd (CW), Argyle House, Joel Street, Northwood Hills HA6 1TS. Tel: 09274 28211.

THIS is a gigantic set of checklists on most aspects of programming and application design standards and a mechanism for producing audit reports of the effectiveness of these procedures, called QA.

DP management, consultants and O&M departments will find it useful, as well as people in medium to large DP shops with a desire to strengthen management control ovar procedures.

As a source of ideas in the area this is excellent. Anybody charged with developing such a function in an organisation might well use thia as a source of additional ideas and as a checklist to make sure no essential points have been forgotten.

It might even be used by management to get the ball rolling, or by somebody else to atart a discussion with management about a more formal continuous review of organisational practices.

Even the best of our organisations are guilty of letting daily short-term preasures push away ideals of good practice. We need some kind of watchdog function to give us early warning of poor practice or of failure to carry out, management intentiona.

The overhead cost is indicated here as between 2.5% and 5% of project cost. I take this not as a net cost incraase, but as an investment which, according to many anologous experiences, is likely to save project waste in the short and long term and reault in a net saving.

I found the lack of references, to real users of thia method, made it difficult to evaluate. Since experience ia stated to be from 1968, this should be possible. What does it sove? How much has quality been increased? What does the management using the methods really think of it?

The total lack of mention of the Fagan/IBM Inspection method makas the present text almost obsolete, since that QA method has already (since at least 1974) demonstrated large-scale quantitative benefits at IBM and elsewhare.

TOM GILB

Sliced bread meets its match at last!

The Viewdata Revolution, by Sam Fedida and Rex Malik. 186 pp. £11.50. Associated Business Press (CW), 107 Fleet Street, London, EC4A 2AB. Tel: 01-353 3651.

Viewdata: A Public Information Utility, by Dr Adrian Stokes. 133 pp. £9.95. Input Two-Nine Ltd (CW), 7 Bsnstead Road, Purley, CR2 3ER. Tel: 01-668 5281.

THE simultaneous publication of two independent books covering the same subject is a sign that the area in question has well and truly arrived on the map. The map in this case covers the extensive world of viewdata — or Prestel as the British Post Office would have it called.

For many of us, viewdata has seemingly been around for some considerable time, largely due to the frequent reassurances that a viewdata breakthrough is close.

This breakthrough would appear to be as remote as ever. As members of the great general public even now would admit to having heard about it, and those who have scarcely seem wildly excited by the prospect.

Public trials have come and gone, more or less in line with industry enthusiasm. Existing up and running public information services — variously known as Ceefax, Oracle, Telex and videotext — have hardly stirred the airwaves.

Perhaps this lack of interest will be dispelled by the arrival of two well-informed books on the subject. Prida of place should perhaps be afforded to The Viewdata Revolution, Sam Fedida being the acknowledged inventor of viewdata while co-author Rex Malik is a journalist who specialiaes in computer technology. There is in fact not much revolution in the contents more a narrative covering viewdata technology, past, present and future. Prestel incidentally, hardly gets a look in.

For those wishing to understand the background to viewdata and the future it holds, the book makes entertaining reading.

The progress and pace of viewdata is amply demonstrated by the publication of the second edition of Viewdata A Public Information Utility, by Adrian Stokes, a consultant with Langton Information Systems.

Dr Stokes, whose other activities include teaching computing at Hatfield Poly and representing the disabled, adopts a basically informatics approach.

As such, the book is likely to be of considerable benefit and interest to potential users. It will also be of particular interest to the computer community, notably a section devoted to the effects of viewdata on the DP department.

Anyone entering the viewdata business world will quickly find themselves involved in CUGS (closed users group), and Umbrella IP (an information provider who subcontracts his part of the viewdatabase to other organisations). Fortunately the Stokes book provides a full complement of translation glossaries, acronyms and diagrams.

Dr Stokes suggests it is not an exaggeration to soy that viewdata will have a greater impoct on our lives than any other invention of the 20th Century so far.

Sliced bread, Chinese takeaway foods and the micro chip, it seems, have met their match.

FOCUS

Who will win privacy race?

International Data Flow, by Jan Freese. 71 pp. £3.35. Studentlitteratur/Input Two-Nine Ltd (CW), 7 Banstead Road, Purley, CR2 3ER. Tel: 01-668 5281.

IT la generally believed in informed circles that, if UK privacy legislation doesn't get us, then an EEC variety probably will.

If that la tha case, and the odds are apparently shortening in favour of tha EEC being first past the privacy post, then the publication of this book ia timely.

Where telecommunications are concerned there are no boundary limits. It is as feasible to transmit data across continents as it is across countries. As tha book makes clear, no Customs officer, however zealous, can stop information which, possibly by means of satellites, zooms at incredible speed around the world.

Tha book suggests that currently opposing forces are mustering. While computer technology is encouraging tha growth of transnational data flows, individual countries are doing their best to create legal obstacles. Where apparently high technology meets low political realities, neither side emerges as a clear winner.

Not only is the book clear and concise; it is also highly readable. The author, Jan Freese, has had much to do with the implementation of tha stringent data privacy legislation in Swedan and is currently director-general of the Swedish Data Inspection Board.

Few UK DP professionals will need reminding that while Swedish films may reflect a liberal attitude, such is not the case with tha storing and handling of computer data.

ALAN SIMPSON

Comprehensive treatment

Structured Design: Fundamentals of a Discipline of Computer Program and Systam Design, by Edward Yourdon and Larry Constantine. 473 pp. £13.70. Prentica-Hall International (CW), 66 Wood Lane End, Hemel Hempsteud, Herts. Tel. 0442 58531.

FOLLOWING the huge succeas of the ideaa of structured programming introduced in the 1970s, it has become accepted that large programs should be designed and implemented in a systematic "structured" fashion by dividing them into "modulea" which, ideally, are largely developed separately.

There are now a number of a systematic methods or methodologies for producing designs of this kind. The names of Constantine, Jackaon, Parhaa and Warnier are among thosa that come to mind.

This book ia an exhaustive presentation of Constantine's structured design mathod, and although it has been presented in books before this ia surely by far the most comprehansive available treatment.

There is a considerable amount of material here and quite obvioualy the book is the fruit of years of axperienca with the modularisation of many different software systama.

"Good" and "bad" features of different ways of modulariaing programs are discussed in detail, the haart of the book being a comprehensive discuasion of design tachniquaa ultimately derived from an analysis of the data flow graph associated with the problam. An illuminating, if somewhat brlaf, chapter relatas this approach to thosa of Jackson, Parnas and Warnier.

Unfortunately the book is rather hard to read. The style is sometimes laboured and suffers from the relative scarcity of specific examples of the issues under discussion.

A great daal of work has been lavished on the book and it contains a number of perceptive comments on the relative merits of different kinds of program modularisations and how these can be refined and improved.

Dr PETER WALLIS

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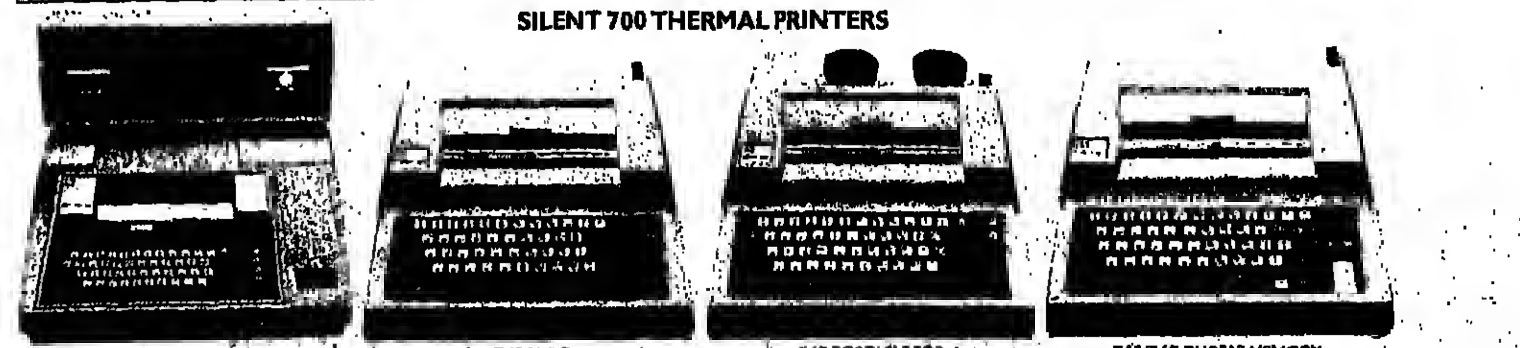

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On-Line Analyst Programmers

Brussels. Salary: to £16K

Our client, a highly reputable Systems Development and Product Support Group has its Continental Headquarters in Brussels. As a result of increased demand for both its software products and support/consultancy services, the Company is seeking Real-Time Analyst/Programmers with current experience of large IBM 370 or 303X systems. Applicants must offer a minimum of 3 years COBOL or PL-1 programming experience and exposure to one or more of the following: **IMS, CICS, TOTAL, ENVIRON, SHADOW, IDMS** and **ADABAS.** For certain positions a good knowledge of French is advantageous. There will be ample opportunity for travel within mainland Europe. Ref: 24/4/B

Software Support

Midlands & Bristol. £7K + car

One of Britain's leading retailers of Micro Based Business Systems has retained Logistix to recruit three Software Support Specialists. Our client's head office is situated in a rural area West of London and as a result of a planned expansion programme they have a requirement for three Regional Software Support Specialists for bases in the Nottingham, Birmingham and Bristol areas. Suitable applicants will be both self-motivated and ambitious whilst the ability to liaise with clients and technical experts at all levels is very important. Candidates should offer at least one year's COBOL or BASIC programming experience on any mini or preferably microcomputer. More important will be past or current involvement in a diverse range of areas such as financial applications programming, micro-electronics, and/or sales support. The Company provides in-house and external training courses in both software and maintenance techniques. Undoubtedly this position will appeal to those who realise the large market potential for Micro Based Business Systems and have a genuine desire to move into this sector. Candidates should enjoy problem solving and customer liaison and be keen to join a dynamic, state-of-the-art company offering an excellent and rare career opportunity. Our client will pay an above-average salary as well as providing a comprehensive range of benefits including a car. Interviews will be held within one week of the appearance of this advertisement. Ref: 24/4/C

Financial Analysts and Designers

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Office and Business Systems

West of London. To £10K + Bonus

A well established Mini-Computer Manufacturer is seeking Applications and Systems Programmers for its Small Business Systems Division. Systems Programmers should offer a minimum of one year's experience of either BASIC and/or Assembler language. Applications Programmers should have recent Business Applications experience on any mini/micro based system in one of the following: Stock/Inventory control, Accounting packages and Payroll/Personnel Records. These positions will be of particular interest to young and ambitious professionals who whilst keeping abreast of technical development also have a tangible opportunity to substantially increase their income and career progression. The Company, in addition to an excellent salary pays an annual bonus based on individual performance and overall Company profitability. Ref: 24/4/E

Systems Analysts - Graphics

Northern Home Counties. Salary: to £10K

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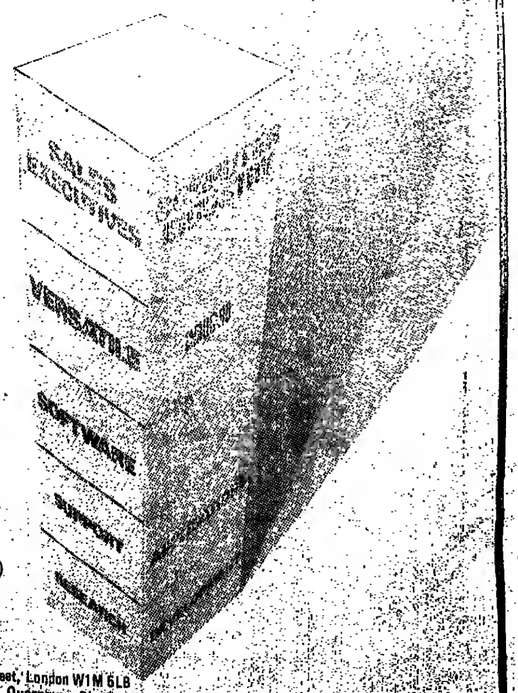

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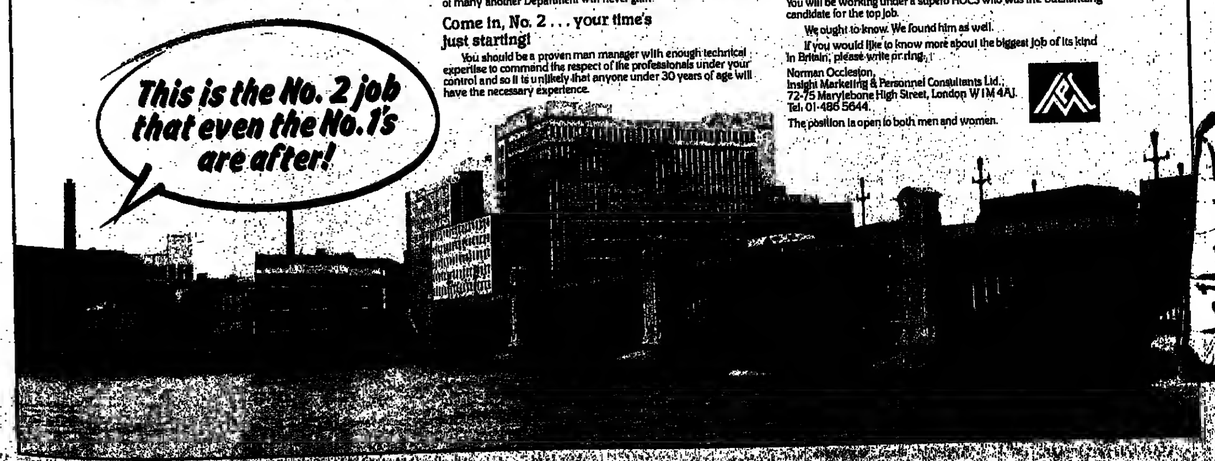

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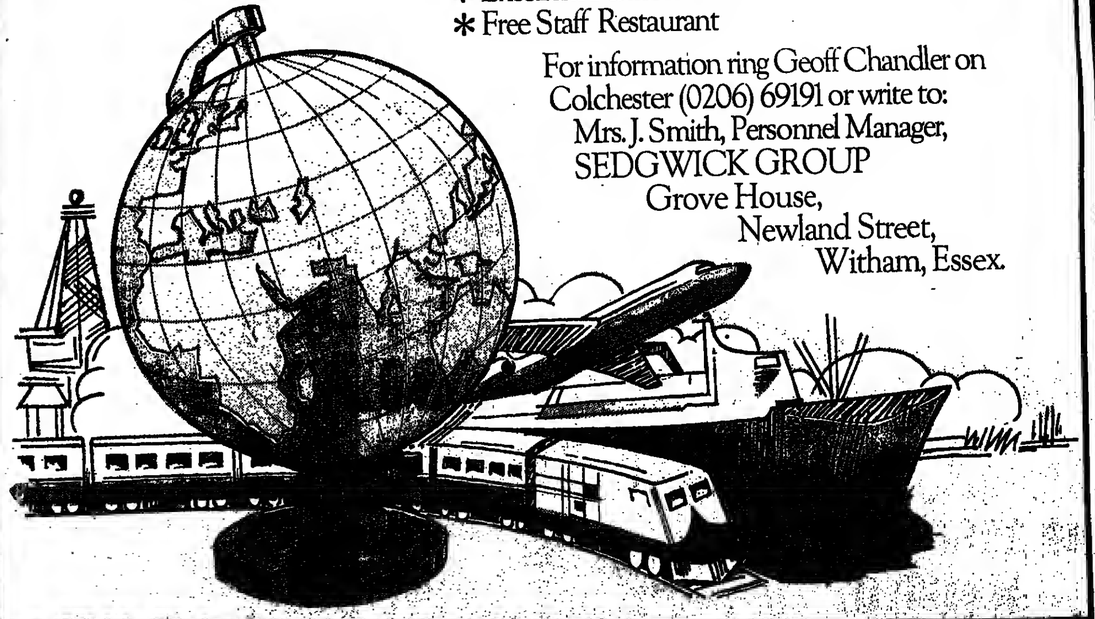

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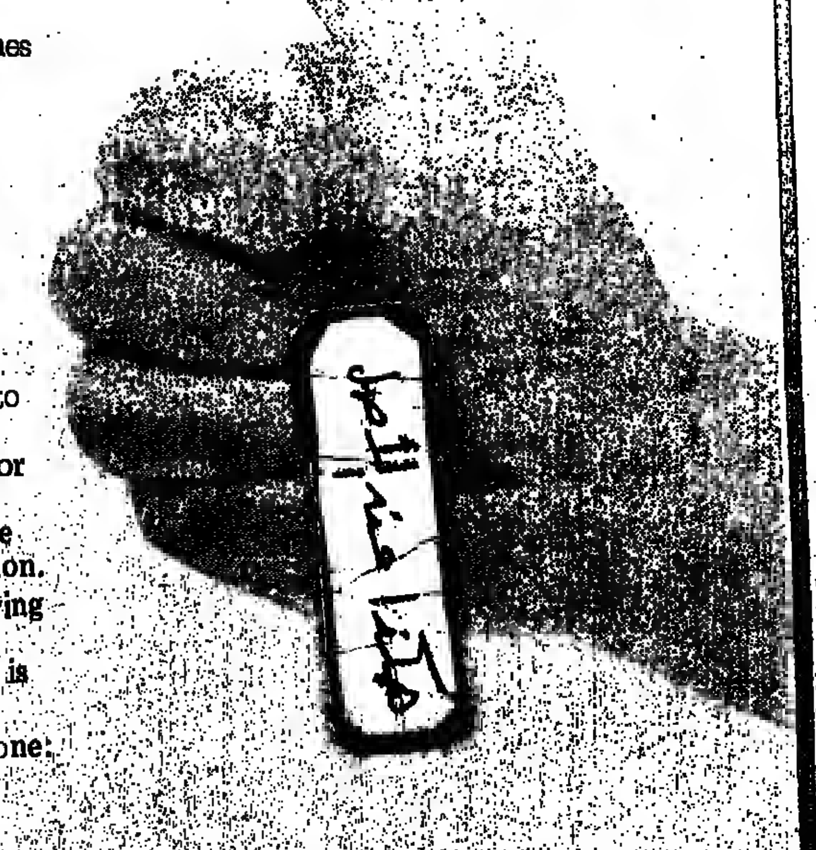

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This expansion has created two vital vacancies. Candidates for both vacancies must be good with people and able to deal easily with those of other cultures.

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Responsible for directing the efforts of a small team designing and implementing the new system which will cater for up to 100,000 accounts and 15,000 movements daily.

The candidate will be familiar with IBM systems and on-line working and will be conversant with programming.

OPERATIONS SUPERVISOR

Responsible for day-to-day running of data prep, data control and operations.

The candidate must be a good technician possessing in-depth knowledge of DOS/VS and should have some previous supervisory experience. Again a knowledge of banking functions would be advantageous.

Banking experience would be most advantageous.

In the first instance contact Derek Pearson for an early interview.

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION

(783)

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We are currently making extensive use of a Bureau facility and are proposing to set up a new Data Processing Department based on a Sperry Univac 90/30 computer. This development plan, which will involve the use of the Unis manufacturing system, is a challenging opportunity and applications are invited for the following posts.

DATA PROCESSING MANAGER — Circa £9K

Applicants should be over 30 years of age, and have a sound systems analyst/project management background, preferably in a manufacturing environment. Liaising with our parent company in America will be necessary.

SYSTEMS ANALYST — Circa £7K

Applicants should have at least two years' experience of management information systems in a manufacturing environment.

PROGRAMMER — Circa £5.5K

Applicants should have at least two years' programming experience in COBOL.

An attractive range of benefits includes pension scheme, life assurance, 21 days annual leave, subsidised lunches and generous relocation assistance will be provided where appropriate.

Please send personal and career details to: D. A. Corke, Company Secretary, Dunham-Bush Limited, Fitzherbert Road, Farlington, Portsmouth, PO6 1RR, HAMPSHIRE.

(795)

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You must have at least 8 years experience in computing, preferably the mini computer/distributed computing field with COBOL background. You must enjoy working in a flexible environment, and relish the chance to develop your existing expertise and acquire new techniques. You must show yourself capable of motivating and guiding others. You should have a degree or equivalent qualification. Although based in London some travel will be involved.

Starting salary from £7,524 to £8,093 depending on experience rising to a maximum of £8,938. Excellent prospects – first promotion may well put you into senior management grades leading to salaries in excess of £10,000 p.a. All salaries include London Weighting Allowances.

For further information and an application form, write to: Mrs. F. Dillon, Postal Management Recruitment Centre, Ref: CW/24/4, Room 339, Postal Headquarters, St. Martins-le-Grand, LONDON EC1A 1HQ.

The Post Office

(780)

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This position will be ideally suited to a young programmer with about 12 months' experience of RPGII on Systems Designs and Implementation.

A salary of c£8,000 will be paid together with the usual benefits associated with a large multi-national company.

For an interview or more details please contact:

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UNIVERSITY OF HONG KONG

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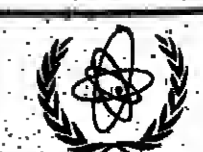
Further particulars and application forms may be obtained from the Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF, or from the Recruitment Section, [illegible] Official University [illegible] Kong, Hong Kong.

[illegible] date for applications is 1[illegible] [illegible] 1980.



The International Atomic Energy Agency seeks

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to be responsible for the planning and implementation of computer training courses and seminars. Knowledge and teaching experience in programming languages (PL/1), teleprocessing (TSO, CICS), database management systems (ADABAS) and IBM hardware and software techniques desired. [illegible] 34,800 initial contract for 2 years, tax free [illegible]. Additional allowances for dependants. Travel and removal expenses paid. 6 weeks annual leave.

Send curriculum vitae under Vacancy Notice No 21/80 to the Division of Personnel, International Atomic Energy Agency, Wagramerstrasse 5, PO Box 100, A-1400 Vienna, Austria.

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[illegible] currently based in the West Country, wish to recruit a project leader [illegible] minimum of 5 years experience gained with sales support. He/She [illegible] experience of PDP DEC 11. Hardware together with sound Basic [illegible] knowledge. Ref. M3861

[illegible]ATA PROCESSING MANAGER
[illegible] LONDON/ESSEX — c£10,000 + CAR

[illegible] a large manufacturing company, wish to recruit a Data Processing [illegible] with solid ICL 2903/4 background. Cobol experience is essential. The [illegible] applicant will be expected to participate in the day-to-day running of the [illegible] and having the ability to manage a small department. Ref. M3860

[illegible]IOR OPERATOR
[illegible] of LONDON — To: £5,400

[illegible] Operator is required to work on a new IBM mainframe. Ideally 2 years' [illegible] POWER experience is required together with CICS and knowledge of [illegible]. An excellent salary coupled with generous benefits are offered. Ref. 03888

[illegible]OR OPERATOR/SHIFT LEADER
c£6,000

[illegible] are seeking applicants with at least 3 years' experience gained on [illegible] under RSX together with communications experience. The [illegible] candidate will join a fast growing department within a large company. Ref. M3958

[illegible]RATORS/SEN. OPERATORS
[illegible] COUNTRY — £4,200-£5,700 (nc)

[illegible] are seeking an operator and senior operator for their 370/138 site. [illegible] one year's experience of OS/VS1 is essential together with JCL. [illegible] An IBM 4331 is to be installed later in the year. Ref. B3962/3

[illegible]IOR OPERATOR
[illegible] LONDON — c£6,000

[illegible] excellent opportunity for someone to join a small site with the [illegible] to take a lot of responsibility. The position would suit someone with [illegible] computer operations background. Future prospects with this Days Only [illegible] Excellent Company benefits include cheap Mortgage and BUPA. Ref. M3868

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c£6,000

[illegible] manufacturing company are seeking experienced operators with a [illegible] 18 months OS/VS1 experience. The site operates on a 3 shift [illegible] successful applicant will be expected to attain the role of SHIFT [illegible] within a short time. Ref. R3928

[illegible]ERATORS
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[illegible] is seeking applicants with ICL 1900 (GI) experience who will be [illegible] on their 2900 range after a qualifying period. This is an ideal [illegible] for someone who wishes to progress within operations. Ref. M3777

[illegible]OGRAMMER/ANALYSTS
[illegible] COAST — From £6,000

[illegible] are wishing to recruit two programmer/analysts for their recently [illegible] systems division. At least 18 months' COBOL is required. The [illegible] offers a rapid progressive career structure on the latest IBM hardware. Ref. 03906

RPG II PROGRAMMER
SOUTH COAST — c£5,250

After a recent expansion our clients are requiring RPG II programmers with a minimum of 1 year's experience. An introduction to database systems will be given together with screen base appreciation. Ref. B3822

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ESSEX — c£6,000

Our clients are seeking to recruit a systems person who has gained a good business background within a manufacturing field. This is an ideal opportunity for someone who wishes to progress in their career. Ref. M3883

PROGRAMMER/ANALYST
NORTH LONDON — To £8,000

Our clients are installing an IBM 4331 in May. Applicants should have experience of COBOL together with TP systems and ISAM and/or VSAM file structures. Generous salary and company benefits apply. Ref. B3884

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Salary/Rate

Position Required (Contract/Permanent) delete

Salary/Rate

Notice Required / Date Available (delete)

Areas Preferred First Choice

Second Choice

Experience to date. (Last Position First)

Company Name and Location	From Mth Year	To Mth Year	Duties and experience

Date — Signature

Ref. No. / DATE

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- you have at least four years' sound COBOL experience.
- you can work with minimum supervision
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ESSEX HARDWARE: IBM 370 & 3030 TO: £XK
POSITIONS:
ANALYSTS
IRM experience ideally with TP
PROGRAMMERS
At least 2 years' PL/1 and/or BAL
BENEFITS Excellent Pension Scheme. Free Restaurant and Life Assurance. Relocation expenses where applicable.
Ref: CW/2404/10

LIVERPOOL HARDWARE: Honeywell LEV RR TO: £RK
POSITIONS
PROGRAMMERS
Cobol 10S & 70S
SYSTEMS PROGS
GCOS LEV 8 Assembler
Ref: CW/2404/20

BIRMINGHAM HARDWARE: IBM 370 TO: £7.9K
POSITIONS:
ANALYSTS, ANALYST/PROGS
PROGRAMMERS
Minimum of 1 year's experience on IBM Database and advantage.
Ref: CW/2404/18

BRISTOL HARDWARE: IBM 370 TO: £8.5K
POSITION.
'SUPER' OPERATORS
Knowledge of IBM, JCL & Utilities
Ref: CW/2404/37

ESSEX HARDWARE: Hewlett Packard 3000 TO: £NEG
POSITION.
PROGRAMMER
Experience HP300 Opportunity for Operations man
Ref: CW/2404/86

LONDON HARDWARE: IQM 370 & 330 TO: £8 ½
POSITION.
ANALYST/PROGRAMMER
Experience of IMS 8 or CICS
Ref: CW/2404/81

BRISTOL HARDWARE: PDP 11 TO: £8K
POSITIONS
SYSTEMS ANALYST
PROJECT LEADER
(with Sales Supp experience)
RSTS with Basic + / Diabol and advantageous
BENEFITS: Double Bonus Bahamas LEDs
Ref: CW/2404/86

BONUS HARDWARE: PDP 11 TO: £8K
POSITIONS:
SYSTEMS ANALYST
SEN. PROGRAMMERS
PROGRAMMERS
RSTS with Basic + / Diabol and advantages
BENEFITS: Double Bonus Schemes LEDs
Ref: CW/2404/89

STAFFORDSHIRE HARDWARE: PDP 11/70 & NCR Century TO: £7K
POSITION:
PROGRAMMERS
Experience in Nont 3 and Mimmps required.
BENEFITS: Relocation expenses where applicable.
Ref: CW/2404/18

U.S.A. HARDWARE: IBM 370 & 3030 TO: £30K
POSITIONS:
ANALYSTS, ANALYST/PROGS
PROGRAMMERS, SYSTEMS PROGS
Minimum 2 years on either OS or DOS using Cobol. IMS an advantage.
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SURREY HARDWARE: ICL 1900 Ref: CW/2404/03
POSITION: TO: £XK
PROGRAMMER
At least 18 months' Cobol

ESSEX HARDWARE: Honeywell LEV 8R Ref: CW/2404/28
POSITIONS: TO: £XK
ANALYSTS
3-4 years' experience
PROGRAMMERS
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BENEFITS: Relocation expenses where applicable.

MIDDLESEX HARDWARE: ICL 2970 Ref: CW/2404/26
POSITIONS: TO: £6K
ANALYSTS, PROGRAMMERS
Sound background on any mainframe.

LONDON HARDWARE: IBM 370 Ref: CW/2404/11
POSITIONS: TO: £9K
ANALYSTS, ANALYST/PROGS
PROGRAMMERS, SYSTEM PROGS
Cobol necessity. Database an advantage
In depth knowledge of Assembler

NORTH LANCS. HARDWARE: IBM 370 TO: £7K
POSITIONS
ANALYSTS
Established background.
PROGRAMMERS
2-3 years' PL/1
BENEFITS: Staff Mortgage

SOUTH-EAST HARDWARE: Univac 1100 & ICL 1900 Ref: CW/2404/01
POSITIONS: TO: £8.5K
PROGRAMMERS, PROG/ANALYSTS
Cobol Plus Assembler and/or PLAN
PROJECT LEADERS
Systems and Programming background
BENEFITS. Non-contributory Pension Scheme

STAFFORDSHIRE HARDWARE: IBM 370 & 3030 Ref: CW/2404/05
POSITION: TO: £8K
ANALYSTS
Minimum 2 years' experience.
SYSTEM PROGS
Assembler, OS/MVS background
BENEFITS. Excellent Pension Scheme. Relocation expenses.

SURREY HARDWARE: Burroughs 3700 Ref: CW/2404/18
POSITION: TO: £8K
ANALYSTS
Any mainframe, programming experience an advantage.
BENEFITS: Relocation expenses where applicable

BERKSHIRE HARDWARE: IBM 370 Ref: CW/2404/31
POSITIONS TO: £7K
ANALYST
At least 2 years' experience
BENEFITS: Relocation expenses where applicable

WEST MIDLANDS HARDWARE: IBM System 34 Ref: CW/2404/37
POSITION: TO: £7K
SENIOR ANALYST/PROG
Extensive knowledge of RPG II, plus "User" Liaison.
BENEFITS: Company car provided.

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ICL 1900	GEORGE II, COBOL, FORTRAN, FILETAB PROGRAMMERS	£450 p.w. Tax Free + Accommodation * ABU DHABI *
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SYSTEMS ANALYST
c £6,500 + review in June

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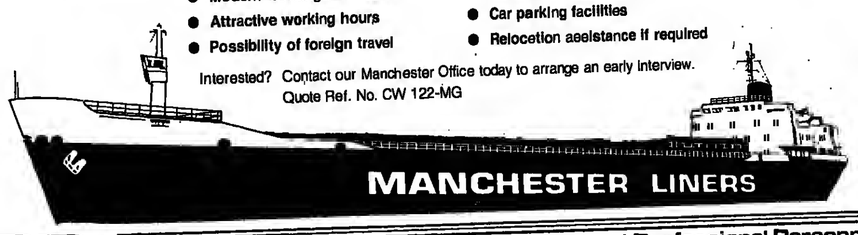

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★ Solid A/P experience
★ International Training (US)
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★ To support S and P Manager
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We are a rapidly expanding software house dedicated to providing professional systems and programming services to Honeywell users. These services, which include consultancy, machine conversions, application software, programming and contract work are provided from Manchester and Leeds in the North and Birmingham in the Midlands. Following our success, we need more systems analysts and programmers with a sound COBOL background on major manufacturer's equipment who wish to work in an interesting and varied environment either on a permanent or freelance basis. The ability to make a significant contribution to the growth of the company is a major consideration.
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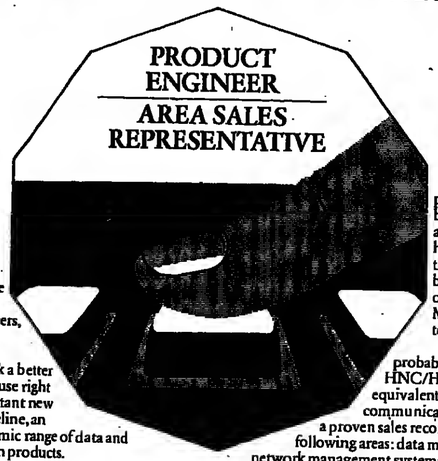

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The company is successful, the environment fast moving and the long term prospects outstanding. The successful introduction of new systems and the development of the data processing function could open the way to a highly stimulating career opportunity in a much wider general management role within the company.

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This is a top position and the total remuneration package which will reflect this includes a salary negotiable from £15,000, an executive car and other appropriate benefits.

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to £9500

SYSTEMS PROGRAMMERS

The successful candidates will have about 2 years practical experience of OS in a medium/large IBM site. For some positions, CICS experience would also be an advantage. *(Ref. CW/8043)*

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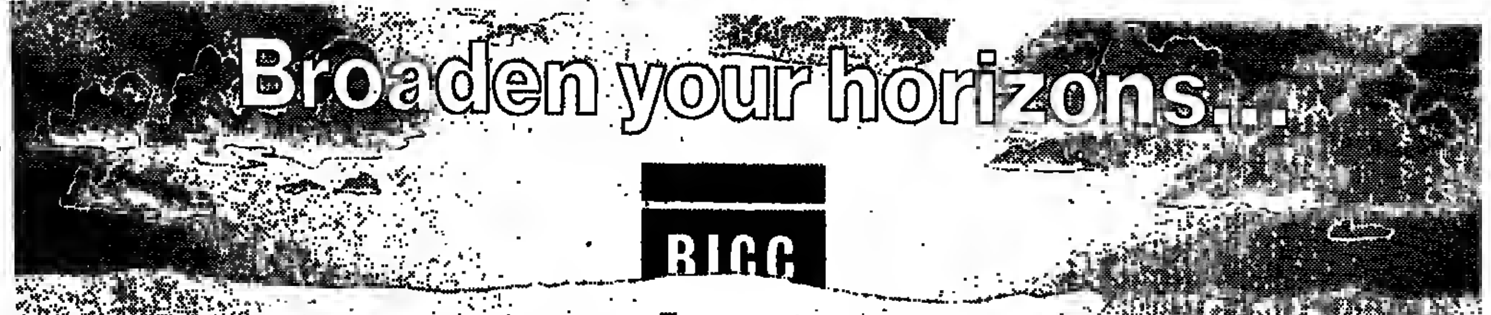

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To control a project team of analysts and programmers responsible for both development and maintenance of systems. Proven systems experience, at least 2 years, with previous DP experience as a programmer is preferred, and a good educational background is necessary. Applications covered by the installation are wide-ranging and commercial or financial experience will be relevant.

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This position has responsibility for the evaluation of all software, including operating systems and commercial packages and for the implementation of new systems software within the installation. Technical experience must include in-depth ASSEMBLER, DOS/VS and CICS. People responsibility must be accepted for a small team and some supervisory experience will be necessary. Any necessary training will be given in new software techniques, such as VSE, VM and VOLLIE.

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(643)

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Salaries negotiable up to £10,000 p.a.

You'll recognise BICC as being one of Britain's top ten companies and for its work in Electrical, Mechanical and Civil Engineering.

However, you may not realise the extent of BICC's involvement in computer systems. Our many installations were established to provide computer support to user companies within the BICC Group and now provide a user service to an ever increasing number of outside companies.

Our success has resulted from an exciting involvement in both BICC and user company systems and with the upgrading of our range of equipment—recently several ICL 2900 series have been installed. Our own telecommunication system includes a high speed trunk network carrying telephone, telegraph, telemetry, telex and data traffic.

To realise the full installation potential we now need additional Systems Consultants and Senior Programmers to promote systems packages to other commercial users in the U.K. and overseas.

Based at our Prescot H.Q. these challenging [illegible] advise clients on their systems, and to make recommendations on a wide variety of computer applications.

Candidates aged from mid-twenties and preferably educated to degree level, should have at least 4 years experience gained in a commercial systems or programming environment.

Conditions of employment are excellent and include a very competitive salary plus bonus. Relocation expenses will be paid where appropriate.

To find out more about the job telephone Mr. L. Barker, Personnel Services Manager, [illegible] details about yourself. BICC Limited, P.O. Box 1, Prescot, Merseyside L34 5SZ. Tel: 051-426 5571, Ext. 5052.

FACILITIES MANAGEMENT BUSINESS SYSTEMS CONTRACT STAFF SOFTWARE PACKAGES COMPUTER SECURITY RECRUITMENT AD CONTRACT STAFF SUPPORT BUSINESS

COMPUTER RECRUITMENT

Contract Sales Co-ordinator

We require someone who has a sound background in Computing, with at least a fundamental understanding of Systems and Programming in order to appreciate further training. This job involves Sales Support and has a strong P.R. content. It is therefore essential that you have an excellent telephone manner.

The successful candidate will probably be between 23-30, and should be prepared to work staggered hours (i.e. lunchtime start 2 days a week) in return for an ample basic salary plus quarterly incentive bonuses.

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HEXAGON computer services
145 WARDOUR STREET LONDON [illegible]

TEL 01-439 3671

West London 3031, enthusiastic about new applications and database, wishes to meet Systems Analysts, Senior Application and Systems Programmers, with similar interests . . .

A major IBM 3031 installation in West London is installing new systems to complement a wide range of applications already implemented. The machine is currently operating under DOS/VS but an upgrade is planned to DOS/VSE and VM. Database facilities are provided by DL/1 and the teleprocessing system runs under CICS. At present the main programming language is ASSEMBLER but COBOL, FORTRAN and EASYTRIEVE are also used.

SENIOR ANALYST (Database) — To £9,480 + 27 days holiday + Other Benefits

To work with user departments on the feasibility, analysis and implementation of defined applications within a vigorous development programme. The Analyst will be supported by the Database Designer in the design of the planned extensions of the database. The analyst will be expected to have at least 2 years systems experience, with one significant system implemented, and a good educational background. Involvement with on-line or database systems would be advantageous, but any necessary training will be given.

SENIOR ANALYST — To £9,480 + 27 days holiday + Other Benefits

To control a project team of analysts and programmers responsible for both development and maintenance of systems. Proven systems experience, at least 2 years, with previous DP experience as a programmer is preferred, and a good educational background is necessary. Applications covered by the installation are wide-ranging and commercial or financial experience will be relevant.

SENIOR APPLICATIONS PROGRAMMER — To £7,460 + 25 days holiday + Other Benefits

Working closely with a Senior Analyst and leading a small team of programmers, this position requires good, technical programming experience. At least 2 years working with, preferably, IBM mainframes, in ASSEMBLER and COBOL, with a knowledge of CICS.

SENIOR SYSTEMS PROGRAMMER — To £9,480 + 27 days holiday + Other Benefits

This position has responsibility for the evaluation of all software, including operating systems and commercial packages and for the implementation of new systems software within the installation. Technical experience must include in-depth ASSEMBLER, DOS/VS and CICS. People responsibility must be accepted for a small team and some supervisory experience will be necessary. Any necessary training will be given in new software techniques, such as VSE, VM and VOLLIE.

OTHER BENEFITS, in addition to salary and exceptional holiday conditions, include:

- 35 hour week
- Flexitime
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- Accessible, West London offices
- Interest Free Season Ticket Loans
- Excellent Pension Scheme
- Established review procedure - next review 1st July, 1980.

Positions are open to male and female applicants. To apply please write or telephone (24 hour service) quoting ref: CW121-P.

CAPP ASSOCIATES 01-686 9693

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AMP House, Dingwall Road, CROYDON CR9 2AU

SCOTLAND

RPG II PROGRAMMER

Denholm is a major and successful organisation located in Glasgow.

We require a Programmer with a minimum of 18 months' RPG II experience to join our Data Processing Department, presently numbering eleven. Knowledge of CCP on line application would be an advantage. This is an expanding department and career prospects are good for the right candidate.

Salary and conditions of service will be discussed at interview.

For further details please phone:
Mr. G. W. Roser
Shore Personnel and Administration Manager
041-248 2988, extension 254

WALSALL METROPOLITAN BOROUGH COUNCIL

The following vacancy exists in the Council's Computer Division:

SENIOR PROGRAMMER

Up to £7,077 (cost of living increase due 1.7.80)

Applicants must have a minimum of 2 years' COBOL experience, preferably on ICL 1900 series. A knowledge of PLAN, COMMS. MANAGER and DRIVER would be advantageous.

The appointment offers the following benefits:
- Removal expenses and lodging allowance (where appropriate)
- 24 days' annual leave + 12 days' public holiday
- Flexible working hours
- Opportunity to work on real-time applications
- Opportunity to work on new range machine (evaluations currently taking place to replace existing ICL 1902T)

Please write or telephone for an application form and further information to the Treasurer, Walsall Metropolitan Borough Council, Civic Centre, Walsall WS1 1TW (telephone Walsall 21244, ext. 2824).

Closing date for receipt of applications: 9th May, 1980.

(643)

FIELD ENGINEERS

Documation – the fifth fastest growing manufacturer in the computer industry, with a growth rate of 70 per cent and still rising – is looking for field engineers.

These are required to service Documation's range of IBM plug-compatible printers – which includes the world's fastest impact line printer – in London and the Midlands. Usual large company benefits apply, including company car, free BUPA membership and life insurance. If you are interested in finding out more about these openings, informal interviews will be held on:

- Tuesday, 29th April, at the Royal Garden Hotel, Kensington. 12 noon to 9 PM.
- Wednesday, 9th May, at the Post House Hotel, Great Barr, Birmingham. (Off exit 7 on M6.) 12 noon to 9 PM.

If you are unable to attend, please telephone Maureen Day on 01-898 1821 to arrange an interview.

Documation Limited, 13 Mount Road, Hanworth, Feltham, Middlesex TW13 6AR.

DOCUMATION

Computer Programmer

Forestry Commission Research Station
Alice Holt Lodge, Farnham, Surrey

. to join a small team in the Statistics and Computing Branch, providing programming support for Forestry Commission research on the growing, protection from pests, and planned harvesting of trees. The computer programmer appointed will assist statisticians and other programmers with the writing and application of mathematical and statistical software, and will develop data bases so that enquiries can be quickly answered. The work will involve programming in FORTRAN PASCAL and BASIC and use of a PRIME 400 linked to other larger computers.

Candidates, normally aged under 27, should have a Degree or equivalent, preferably in mathematics, some knowledge of statistical methods and knowledge of FORTRAN. Computing experience, particularly with PRIME mini-computers, would be advantageous. Appointment as Scientific Officer £3890-£5485 with starting salary according to qualifications and experience. Salaries under review. Promotion prospects. Non contributory pension scheme.

For further details and an application form (to be returned by 9th May, 1980) write to Mr A J Freeman, Personnel Branch, Forestry Commission, 231 Corstorphine Road, Edinburgh EH12 7AT. Please quote ref. SA/14/DM.

(688)

Scientific Civil Service

YORKSHIRE WATER AUTHORITY
SOUTHERN DIVISION

COMPUTER OPERATIONS SUPERVISOR

G5 (£5421-£5805) Pay Award Pending
Ref. No. S14/80

Applications are invited for the above post based at Castle Market Building.

The successful candidate will be responsible for the effective control of the Computer Operations Section including allocating and checking work, maintaining the scheduled time table of computer operations, liaising with user sections and the computer centre and supervising and training the five operations staff. Duties include operating the ICL 7503 computer terminal which is connected to the Authority's ICL 2970 computer located at Bradford, and data preparation equipment as required. During the next few months it is planned to replace the existing computer terminal and card punch and verifier machines with Mohawk Data Services series 21 key to diskette and terminal equipment and experience of this or similar equipment would be advantageous.

Candidates should have proven experience in staff supervision and operation of computer terminal and data preparation equipment.

Applications quoting Ref. No. S14/80 and stating age, qualifications and experience should be sent to the Division Director, Yorkshire Water Authority, Southern Division, Castle Market Building, Exchange Street, Sheffield S1 1UG, to arrive not later than 30th April, 1980.

(814)

UMRCC

University of Manchester Regional Computer Centre
Director: Professor G. Black

UMRCC is a national centre providing a general service to over thirty universities in the United Kingdom. This is currently based on two Control Data 7600 computers each front-ended by an ICL 1900. A CDC CYBER 72, soon to be replaced by a CYBER 170/720, accessed by over a hundred terminals provides an interactive computing service to Manchester users.

SYSTEMS GROUP

COMMUNICATIONS SOFTWARE AND NETWORKS PROGRAMMER/ SENIOR PROGRAMMER

Salary scale: £4042 to £6799 p.a. or £5052 to £10464 p.a. depending on age and experience.
Ref: 72/80/CW.

PROGRAMMER/

Salary scale: £4042 to £6769 p.a. depending on age and experience
Ref. 73/80/CW.
Develop and support NEW networking systems. Real time systems or data communications experience required.

OPERATING SYSTEMS PROGRAMMER/ SENIOR PROGRAMMER

Salary scale: £5052 to £10464 p.a. depending on age and experience.
Ref: 74/80/CW.

PROGRAMMER

Salary scale: £4402 to £6399 p.a. depending on age and experience
Ref: 75/80/CW.
Develop and support operating systems for future NEW mainframes. Systems programming experience required.

INTERACTIVE SYSTEMS GROUP

INTERACTIVE SYSTEMS PROGRAMMER (2 posts)

Salary scale: £4402 to £6766 p.a. depending on age and experience.
Ref: 76-80/CW.
Develop and support a NEW Cyber 170/720. Systems programming experience desirable.

MICROPROCESSORS SECTION MANAGER

Salary scale: £8427 to £10464 p.a. depending on age and experience.
Ref: 77/80/CW.

COMPUTER OFFICER (2 posts)

Salary scale: £5052 to £6766 p.a. depending on age and experience
Ref: 78/80/CW.
Develop and support a NEW microprocessor service. Microprocessor hardware and software experience desirable.
Applicants for all posts should be educated to degree standard.

Benefits include, a good pension scheme and generous holiday entitlement.

If you would enjoy the challenge of working in a stimulating environment with the prospect of a rewarding career, send for further information and an application form (returnable by 22nd May, 1980) to The Registrar, University of Manchester, Oxford Road, Manchester M13 9PL, quoting the appropriate reference.

SYSTEMS ANALYSTS

Are you burning with ambition?
Then there could be a place for you in British Gas (Holborn)

SENIOR SYSTEMS ANALYST Up to £11,243

In charge of a team of Systems and Analyst Programmers. Reference PS/692401(705).

SYSTEMS ANALYST (PLANNING) Up to £8,826

Responsible for forward planning, systems and program design. Reference PS/616901(705).

These vacancies are in our systems planning section whose activities cover a wide range of computer applications from dedicated real time to commercial type data processing, mainly on Univac 1100 series main frame computers.

The salary ranges for these positions include £751 Inner London Weighting and the benefits are those normally associated with a large progressive organisation. These posts are open to men and women.

For further information please telephone Alan Southgate on 01-831 6272 ext 4145 or write with full details of age, qualifications and experience quoting the above references, to the Senior Personnel Officer, (Hinckley) British Gas, 59 Bryanston Street, London W1A 2AZ.

The closing date for applications 28 April 1980.

BRITISH GAS

WANG

P T Metrodata, a representative for Wang Computers and Word Processing Systems has over one hundred computer installations in Indonesia, and because of the extremely rapid growth during 1979 (sixty plus systems) we require an

EXPERIENCED SUPPORT ENGINEER

to train and support local engineers in board repair and maintenance of CPUS and peripherals.

Therefore, if you have plenty of experience in the above areas and you wish to expand on it, we would like to hear from you. In return we can offer you a salary around 20,000 U.S. dollars per annum, car, house, return air fares to the U.K. for you and your family plus plenty of work.

So send your comprehensive C.V., recent photograph and phone no. To "SUPPORT ENGINEER INDONESIA"
c/o 18/30 Clerkenwell Road, London EC1M 5NN.

UNIVERSITY OF SALFORD

PROGRAMMER

(Salary up to £7,410 p.a.)

Required in the Registrar's Departmental administrative computer section which has an ICL 2904/50 computer system with 48K words of store and on-line facilities.

Applicants should be experienced programmers with a background of writing COBOL and/or FILETAB programs. Practical experience of ICL 2903/4 software and programming of on-line applications would be advantageous.

Telephone R. C. Thompson (Management Services Officer) on 061-736 5843, Ext. 7176 for further information or apply in writing to the Registrar, University of Salford, Salford M5 4WT, giving details of your salary, age, education and experience by 8 May, 1980, quoting reference number A/667/CW.

(804)

WE'RE LOOKING FOR AN ANALYST WHO KNOWS OUR BUSINESS BETTER THAN WE DO.

The first thing we should point out is that we know our business very well indeed. If we didn't, we wouldn't be one of Europe's most successful consumer goods groups, marketing a range of products from shampoo to chocolates.

But in data processing, we recognise that an experienced, intelligent outsider may know our business even better than we do ourselves — especially in areas such as the identification of precise user requirements, the specification and implementation of new systems, and the education and training of users to help them reap the maximum benefit from our facilities and our existing systems.

To that end, we're looking for a man or woman who at present is probably working as a systems analyst, but whose interests and ambitions lie in the direction of business analysis.

The person we have in mind will have at least five years' experience in the computer industry, and will ideally have worked on sales, order processing and accounting systems in a fast-moving consumer goods company.

With that kind of background, you'd be in line for a salary of between £8,000 and £8,500, and a benefits package that includes free life assurance, contributory pension scheme, subsidised canteen and discount on Group products.

If you're the sort of person who could give us a fresh insight into our business requirements, you'll certainly realise the importance of this job in the overall pattern of your career.

If you're seriously interested, phone Mark Parker on 01-580 2030. Or write to him at Colgate-Palmolive Limited, 76 Oxford Street, London W1.

Colgate Palmolive

WINNERS TAKE ALL!

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TO £8,000 + CAR
LONDON, MIDLANDS AND HOME COUNTIES

We have four MINI computer manufacturing companies with offices around the country who require people with the confidence to deal with clients in a pre- and post-sales situation. All vacancies require a programming background on minis and the jobs will provide an exciting and satisfying career. CW16/1

PROGRAMMING MANAGER

TO £10,000 VICTORIA

Now at last you have the chance to use your COBOL programming and supervisory experience in a managerial role. This successful and go-ahead service bureau, a subsidiary of a major Finance company, requires a mature applicant to take charge of a small team installing advanced teleprocessing systems around their Prime computer. Prospects are excellent, so apply now for the right career for you. CW16/2

IBM OPERATORS

£5,000 INC. W. LONDON

This large commercial company requires operators with 1 yr.+ IBM 370 DOS/VS and POWER/VS experience. There is a two-shift system only — no nights. Benefits include generous holidays, CPS, subs. cant. and annual bonus. CW16/4

PL/1 VACANCIES

£6,500 to £11,000
LONDON & HOME COUNTIES

We have a number of positions ranging from Programmer to Project Leader with both small and large commercial companies. Locations are the CITY, BROMLEY, BRENTFORD, CHATHAM, HIGH WYCOMBE, REDHILL, SLOUGH, ENFIELD, SOUTHALL and COCKFOSTERS. Perks often include mortgage and removal assistance. CW16/3

CONTRACT PROGRAMMERS

U.K. AND OVERSEAS TO £460 p.w.

370 COBOL DL1	LONDON	3 MTHS.
SYS 3 RPG II	BUCKS.	3 MTHS.
PL1 OS	DEVON	3 MTHS.
MOTOROLA 68 ASSEMBLER	CITY	3 MTHS.
REDIFON/EDITOR	LONDON	3 MTHS.
H'WELL L66 IOS TOS	HOLLAND	6 MTHS.
IMS COBOL OS/VS	HOLLAND	6 MTHS.
MINI ASSEMBLER MESSAGE SWITCHING	FRANCE	6 MTHS.

ICL OPERATORS

TO £6,000+ BEDS.

This company, situated in a picturesque rural setting, requires operators and senior operators with good ICL 1900 experience with GIT or GIII. Benefits include subs. cant., CPS, 4 weeks' hols., and relocation expenses for the right person. If you fit the bill, give us a call. CW16/5

(827)

UCA Recruitment Consultants
UNIVERSAL COMPUTER ASSOCIATES LIMITED
01-995 3883 (01-958 6138 Evenings)
Data Express House, 3 Prospect Place, Heathfield Terrace, Chiswick W.4

Do you have?

- An understanding of accounting principles and procedures
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- A desire to be totally responsible for customer service, and can you supplement it with:
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or

- Experience in a computer bureau environment.

Then we would like to hear from you urgently regarding our vacancy for

Customer Service & Development Consultant

in order that we can meet our planned growth objectives.

Starting salary £6,500 – £8,500 p.a. according to experience, plus comprehensive package of company benefits.

For further details, please contact:

Tom Tough,
Associate Director,
CMG (City of London) Limited,
Eastgate, 53/73 Leman Street,
London E1.
Telephone: 01-481 3881.
Quote ref. C5.

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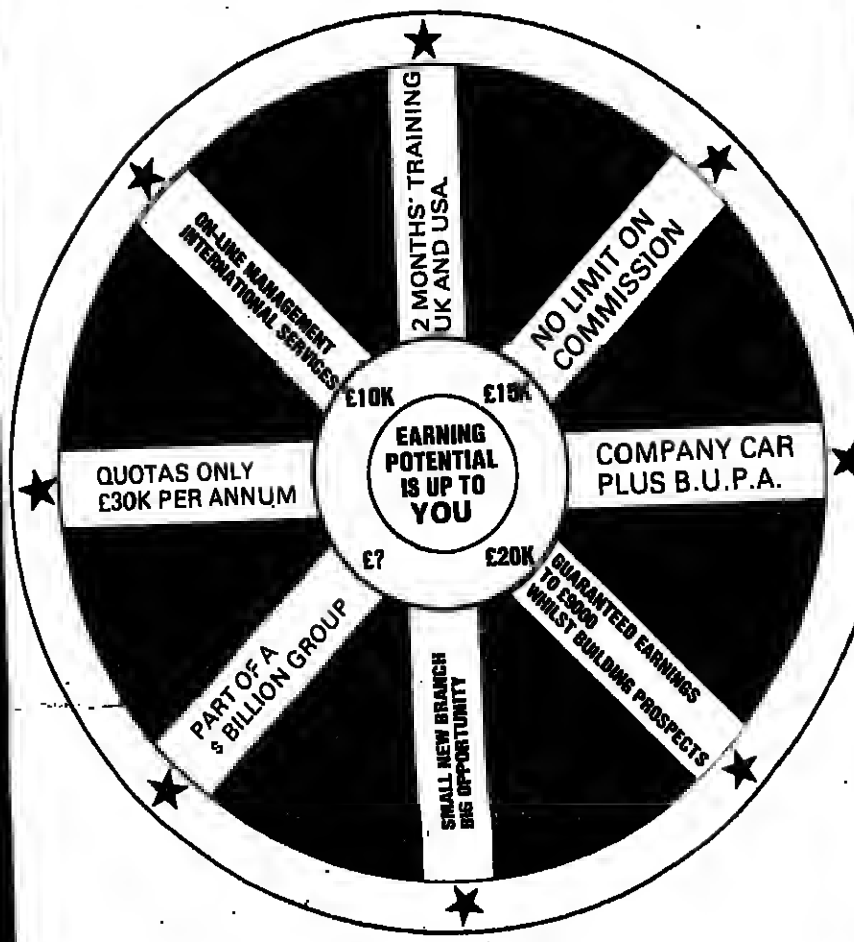
ARE YOU READY TO SPIN THE WHEEL OF FORTUNE?



TO SPIN THE WHEEL YOU MUST BE A SUCCESSFUL COMPUTER SYSTEMS SALESMAN

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CROYDON COLLEGE

Fairfield, Croydon, CR9 1DX

Applications are invited from suitably qualified persons for the following post, duties to commence 1st September, 1980.

COMPUTER STUDIES SECTION
LECTURER II IN COMPUTER STUDIES

A Lecturer is required to teach Computer Studies to students in further and higher education. A degree or equivalent professional qualification is required with a minimum of one years experience in the computer industry. Experience of COBOL and/or teaching is desirable. This is an opportunity to join a new and expanding section. Closing date for applications is Friday, 2nd May, 1980.

The salary for the above post is in accordance with the current Burnham Further Education Award, and is at present:

Lecturer II £6,214-£8,094

which includes the London area allowance. Additions to the scale may be made for appropriate qualifications and the point of entry is dependent on previous relevant experience.

Further details and application form may be obtained from the Vice-Principal, to whom completed forms should be returned.

BUSINESS SYSTEMS ANALYST

Salary Negotiable from £7,500 p.a. upwards

Required for O and M Section of a multi-disciplinary Management Services Unit of a large Public authority.

Applicants should be graduates and/or have a full professional qualification together with three years in O & M/Business Systems including a record of achievement in two of the following:

- Cost reduction exercises;
- Management information systems;
- Office Machinery particularly electronic equipment;
- Use of computer packages;
- Organisation analysis;
- Assessment of staff numbers.

Other related experience (for example work study, computer management/administration) desirable. Preferred age 28 to 40.

Write fully to the Head of Personnel Services, London Borough of Croydon, Taberner House, Park Lane, CR9 3JS.

For further details phone Mr. Alan Olde!, O and M Manager, 01-686 4433, Ext. 2308.

(267)

Ready for the Challenge of Project Management?

c. £10,000 (incl.)

We are responsible for the UK manufacture of Glaxo pharmaceuticals and their sale in this country. We can offer stimulating careers based at our head office in Greenford, Middlesex. If you are looking for further experience and advancement, it could be that this is just the opportunity that you are looking for, not only to manage, but manage things on a bigger scale.

We offer you the opportunity to work in an environment of a large company spread over 11 sites with 8,000 employees.

We offer a successful environment because after many years' experience of running conventional batch processing systems on a large scale, we have just completed the first phase of a conversion program which has moved us from application files to database, and from bulk data transmission to distributed databases updated on-line.

We offer a technically advanced environment with a network of 5 Hewlett-Packard 3000 Series III's and 2 Model 33's spread over 4 sites using the MPE Interactive operating system, the DS3000 software for remote communications, the IMAGE database software, and COBOL for on-line applications programming.

We offer a superb development environment because one whole 2 Megabyte Hewlett-Packard 3000 is dedicated to systems development on-line, and 50 of us at our Greenford Company Systems Development and Database Administration and Technical Support Departments have acquired skills in designing, implementing, administering and supporting on-line distributed database systems.

If you can offer at least 3 years' systems analysis and design experience, and have implemented at least 1 substantial system, preferably in the areas of either accounting or production planning and inventory control, then we would like to talk to you about joining our team as a Project Leader or Project Manager.

Major company benefits include participation in Glaxo Group profitability, a non-contributory pension scheme and relocation assistance if appropriate.

Candidates, male or female, should telephone or write, quoting ref. OEU.230, to Bill Presley, Company Systems Development Manager, Glaxo Operations UK Ltd., Greenford Road, Greenford, Middlesex. Tel: 01-422 3434, ext. 91, or telephone ext. 340 for an application form.

(756)

GO GLAXO OPERATIONS

UNIVERSITY COLLEGE HOSPITAL

COMPUTER OPERATOR

to work in the Chemical Pathology Department on the daily operations of an on-line Laboratory Computer System which is undergoing further development.

The system is based on a Modular 1 computer with disc backing store and multiple terminals. The job offers considerable responsibility, and the successful applicant will be expected to be able to work to time schedules and to adopt a disciplined and professional approach to his/her work.

Applicants should preferably have experience of computer operating, in a real-time environment.

Starting salary dependent on experience on scale £3,295-£5,135 (inclusive of London Weighting) plus 10% shift allowance.

Application forms and further information can be obtained from the Personnel Department, University College Hospital, Gower Street WC1E 6AU. Tel: 01-387 9300, Ext. 381, quoting reference CW/CO/JP.

(Closing date 10 days after appearance of advertisement).

(818)

Move into Database Administration

West London/Berkshire — To £8,500 + Benefits + Relocation

Our client is a highly successful multi-national company operating throughout the world using IBM mainframes and sophisticated minis. Their international systems are developed and implemented from their headquarters in the U.K.

The company has successfully developed and implemented IMS database systems and are now looking to strengthen the Database Administration function.

The successful candidate will have the opportunity to:
- Become actively involved in all aspects of database design, creation, auditing, error recovery and also data dictionary techniques.
- Receive extensive on-going training.
- Expand their knowledge of database techniques within a professional and stimulating environment.

The successful candidate must have:
- At least three years' data processing experience including programming in COBOL on an IBM mainframe under OS, preferably with some IMS experience.
- The ability to relate to users and analysts both on a technical and personal level.

This position provides significant career development as the company has an increasing commitment to the use of databases. Large company benefits apply to this position and, where necessary, assistance will be given with relocation.

For more details contact Yvonne Warren quoting ref. YW 2628.

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR 01-408 1670

Sir Frederick Snow & Partners
Consulting Engineers

PROGRAMMER

The Research and Development section now has a vacancy for a FORTRAN programmer to aid the services given to our engineers. The successful candidate, male or female, should be either a programmer interested in engineering applications or an engineer with computing and programming experience. The post includes assisting engineers running standard packages e.g. GENESYS and developing in-house software. The section has its own PRIME 300 mini-computer and also makes use of bureaux.

Salary will be negotiable.

For further details of our complete employment package please submit a detailed CV to:

Malvyn Jones
Personnel Officer
Sir Frederick Snow & Partners
Ross House
144 Southwark Street
London SE1 0SZ

SYSTEMS ANALYSTS	**LONDON & CITY**	**to £9500**
Self-starters. Commercial and/or General Accounting experience.		Bill
TRAINEE ANALYSTS	**N. LONDON**	**to £7600**
Senior Programmer Analysts will be retrained		Peter
PROGRAMMERS	**LONDON**	**£7000 to £9200**
Must be experienced in IBM Assembler or PL1. Company uses CICS, Real Time, Data Base.		Bill
SUPPORT ANALYST	**MIDDLESEX**	**to £10000**
Engineering background with PL1 or FORTRAN and some Database knowledge.		Peter
ANALYST/PROGRAMMERS RPG2	**MIDDLESEX**	**to £8500**
To be capable of doing an entire system.		Bill
PROGRAMMER/ANALYSTS	**MIDDLESEX**	**£6500 review imminent**
Any COBOL experience to work in this world renowned co.		Bill
COBOL PROGRAMMERS	**LONDON & S.E.**	**to £8000**
18 months' min. COBOL experience. Jobs on Mainframes and Minis.		Peter
ANALYST/PROGRAMMERS	**LONDON**	**to £8000**
Minimum two years' experience of COBOL or ASSEMBLER on any byte m/c.		Peter
SALESPEOPLE	**LONDON & S.E.**	**O.E. £18000 + car**
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TELEPHONE: 01-839 8087
Peter Barson or
Bill Taylor

Barson, Taylor & Ward
Computer Personnel Consultants
107 Jermyn St., London SW1Y 6EE

BARSON TAYLOR & WARD

CHIEF PROGRAMMER	**CITY**	**C. £10,000**
IBM COBOL — to manage a team.		
PROJECT MANAGER	**RUISLIP**	**C. £8,000**
Several years' analysis experience required.		
SENIOR ANAL/PROG	**S.W.3**	**C. £8,800**
COBOL programming + analysis experience.		
SENIOR PROGRAMMER	**S.W.1**	**C. £8,800**
BASIC + ASSEMBLER + supervisory experience.		
ANALYST/PROGS.	**EAST SURREY**	**To £8,000**
2 years' COBOL + some experience on minis.		
SYSTEMS ANALYST	**NR. REDHILL**	**C. £7,000**
PROGRAMMERS	**S.W.1**	**C. £8,000**
3 years' experience of FORTRAN programming.		
SYSTEMS ANALYST	**H. WYCOMBE**	**C. £8,000**
Manufacturing company — on line environment.		
PROGRAMMERS (COBOL)	**HAYWARDS HEATH**	**£6,500**
ANALYST/PROG	**NR. REDHILL**	**To £7,000**
2 years' BASIC or COBOL required.		
ANALYST + ANAL/PROG	**S.E. LONDON**	**£ Neg.**
2 years' analysis experience RPG II.		

Please send in full career details or telephone for an application form.

AMES PERSONNEL — For further information please telephone 061-236 3596

Employment Agency, Suite 14, Dryden Chambers, 119 Oxford Street, London W1R 1PA. Tel: 01-434 1106

(917)

SENIOR COMPUTER OPERATORS

CROYDON

Commencing salary including shift allowance, within the range £5950-£6983 per annum.

Our present installation comprises a 4.0 meg 3032 and a 4 meg. AMO AHL V78 operating on a 3 x 8 hour shift days a week basis. We undertake a wide variety of both batch and on-line applications and currently have about 850 VDUs installed throughout the Region.

You should be prepared to work a shift system and have at least 2 years' experience with IBM 260/370 hardware. Familiarity with OS/VS operating systems is desirable.

Please write, giving full details to the Personnel Manager, SEGAS, SEGAS House, Katharine Street, Croydon CR9 1JU, quoting reference no. 0.6985.

People come first with SOUTH EASTERN GAS

ICI Central Toxicology Laboratory

This Laboratory provides advisory and experimental services to ICI Limited, for the control of toxic hazards in manufacturing processes and in other fields of growing importance, such as the development of pesticides and food additives. The provision of toxicological information, prior to product clearance and registration in many countries, is a major activity undertaken by the Laboratory on behalf of the ICI Group.

Operations Controller-Computer Services Group

The Central Toxicology Laboratory is introducing a data handling scheme to store and analyse the data generated by the toxicity tests it carries out for Divisions. The Job Holder will be responsible for the secure operation of the system which is based on a Data General M600 mini computer. This will include the supervision of other operating staff. He/she will also be involved in the development of the operations environment of the new system and in the use of computer hardware throughout the Laboratory. He/she will also advise users on the system facilities.

Candidates should have an engineering (or computer science or similar) degree (or equivalent) and previous working experience in a mini-computer environment with on-line systems. Supervisory and administrative experience is also necessary. The appointment offers an opportunity for managerial involvement with a rapidly expanding innovative mini-computer installation both in terms of hardware and software.

The salary for this vacancy is around £5200 in addition to which there is a Productivity Bonus and Profit Sharing Scheme. A contributory Pension Scheme is in operation and, after joining, staff receive a reasonable refund of removal expenses.

You would be working two miles south of Alderley Edge on the A34 between Manchester and the Potteries on a 300 acre site which the Laboratory shares with ICI's Pharmaceuticals Division. Alderley Edge is less than 20 miles from Manchester and is within easy reach of the Derbyshire Peak District, the Lake District and the North Wales Coast. Staff working at Alderley live over a wide area but mainly in the Macclesfield and Alderley Edge/Wilmslow area.

Applicants, male and female, should telephone or write for an application form (quoting reference OC/SS/JM) to:

Mr. R. A. Blain,
Assistant Personnel Officer,
ICI Central Toxicology Laboratory,
Imperial Chemical Industries Ltd.,
Alderley Park,
Nr. Macclesfield,
Cheshire SK10 4TJ.

Telephone: Alderley Edge (0625) 582711.

Closing date for applications: 8th May 1980.

Overseas candidates should only apply if they have a planned visit to the UK within the next two months.

SYSTEMS ANALYST

Edinburgh — up to £7,392

Scottish Gas has a vacancy which would be suitable for persons with two years' experience as a Systems Analyst or an Analyst/Programmer. The post will be located at Granton House, Headquarters in Edinburgh.

We have a large portfolio of existing batch and on line computer systems, and are currently designing new applications using a number of different types of equipment. A period of steady growth of demand for new computer systems, both local and remote is expected.

We are more interested in your adaptability and motivation to contribute effectively to our development programme than in the type of machine experience you have.

Salary is on a scale from £6,428 to £7,392 per annum plus the benefits normally associated with a large organisation including a choice of staff restaurant facilities, sports and social activities.

The department operate flexible working hours. Re-location expenses will be refunded where applicable.

Write with a full CV to: Appointments Officer, Scottish Gas, 4 Marine Drive, Edinburgh EH5 1YB. Ref. 4 RPs or phone for an application form 031-552 6271 ext. 251.

SCOTTISH GAS

Senior Systems Analysts — Tripoli

£12,000 to £15,000 p.a. Tax free + benefits

Oasis Oil has grown rapidly from a small exploration operation to one of the largest oil producers in the world today. At the moment we urgently require two Senior Systems Analysts.

Applicants should have 8-10 years experience in Computer Systems Analysis and Programming (commercial applications) including major systems design efforts, a sound practical knowledge of ANS COBOL, and familiarity with DOS/VS, VSAM and IBM S/370 DOS/VS Power Operating Systems.

The successful applicant will be required to work completely independently with no outside assistance.

Our system comprises of an IBM 370/135 512K core, disk and tape peripherals and terminal 3270 series.

Our major programming languages are ANS/COBOL and MARK IV, with occasional use of Fortran and Assembler.

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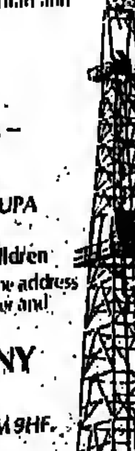
Please write for an application form to the address below giving a brief resumé of your career and personal data.



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We are just completing our conversion to an IBM 370/138 and will shortly start a number of new projects that will require the assistance of an expert Systems Programmer. New projects over the next two years will include an extension to our TP system, conversion to DOS/VSE, installation of POWER/VS, implementation of an on-line programming aid, examination of data-base Management Systems and a possible switch to COBOL applications programming.

Should you feel that you can handle the above work-load as part of a small dynamic team then apply, in the first instance, to:

Margaret Jury, Personnel Administrator
Tel. Haywards Heath 51581

(874)

Lothian Regional Council

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For systems design, experience in commerce or industry, as analyst or designer, in a team implementing computer based systems is required, and for computer studies, experience in other relevant fields will be considered. Research and consultancy in appropriate areas are encouraged.

Applicants should possess an honours degree or equivalent professional qualification. Membership of the British Computer Society together with good basic qualifications may be acceptable.

Application forms and further particulars from:

The Administrative [illegible] Napier College of Commerce and Technology, Colinton Road, Edinburgh EH10 5DT.

(693)

COMPUTER OPERATIONS MANAGER

£7,624-£8,334 — Weybridge

For Brooklands Technical College, Heath Road, to take charge of the day-to-day running of the new UNIVAC V77/600 192K, 12 terminal multi-access system which will provide a service to the College in respect of existing specialist computer courses and support for many others.

The Post should suit a man or woman who has previous experience as an analyst/programmer and now wishes to develop management expertise.

Benefits include generous assistance with relocation, 22 days paid leave per annum and a pleasant environment in which to work, with an experienced team of computing staff.

Further details and an application form from the Chief Administrative Officer, but people wishing to discuss the Post beforehand should telephone Mr Alan Beare, Weybridge 63300, extension 247.

(660)

SURREY COUNTY COUNCIL

PROGRAMMER/ ANALYST

North Sea Oil Aberdeen

Since Occidental brought its two North Sea Oil Fields, Piper and Claymore on stream in record time and established an enviable reputation as one of the leading operators in the North Sea, our highly skilled Data Processing team have continued to play a significant role, through the provision of both business and technical processing services.
The continued expansion and development of the company is reflected in the D.P. function where we now intend to recruit an additional Programmer/ Analyst.
As an integral part of a small team, the primary duties will be to initiate and implement programme systems in liaison with the appropriate user departments, develop test data and operating instructions, document programmes in modular fashion and, assist in systems analysis and design when required.
The person we appoint will have at least four year's experience in business systems programming including financial and/or material management systems in a commercial environment. Experience with I.B.M. 370/158 or larger processor, J.C.L. and COBOL is essential.
The rewards package is excellent and includes a competitive salary, free life assurance, contributory pension scheme and assistance with relocation expenses where appropriate. In addition, you will find a stimulating working atmosphere where initiative, flexibility and enthusiasm are actively encouraged.
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Mr. R. A. Grant, Personnel Officer, Occidental Petroleum (Caledonia) Ltd., 127 Causewayend, Aberdeen, AB2 3TP

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COUNTY TREASURER'S DEPARTMENT

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£6,636-£7,077 per annum

SENIOR PROGRAMMER

£5,973-7,077 per annum

The Authority has taken delivery of en ICL 2972 Computer end the ebove steff ere required to join project teems actively working on the trensfer of systems to this machine.
Applicante for the Systeme Analyst vecency should prelerebly heve e minimum of one year's systems analysis experience. Commencing salary is dependent on qualifications end experience, and progression beyond £7,077 will be subject to experience end competence to perform work el e higher level.
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Application forms (to be returned by 9th May, 1980) and further particulers are obtainable from the County Treasurer, Mid-Glamorgan County Council, County Hall, CARDIFF.

CANVASSING WILL DISQUALIFY (689)

SYSTEMS PROGRAMMER

For Univac 1100

Hinckley Up to £8,075

We require a Systems Programmer to join a small team providing software support for our UNIVAC 1100 systems. The hardware consists of a UNIVAC 1106, together with a recently installed 1100/11.
The system is used in connection with control of the Natural Gas Transmission System and also provides some bureau services to British Gas Headquarters, primarily for engineering and planning applications.
The post, based in Hinckley, Leicestershire, involves the maintenance and development of the UNIVAC 1100 Operating System and other standard UNIVAC and in-house software, and support to the Operations Section and to computer users.
Applicants should ideally have two years' experience as a Systems Programmer using a low-level language, preferably on UNIVAC 1100 systems, though applications programmers on other computer ranges wishing to widen their experience would also be considered.
Salary is within the range £6,428 – £8,075. The benefits normally associated with a large progressive organisation will also be provided.
Hinckley is in a low cost housing area within easy reach of pleasant countryside, and by convenient motorway access to the large city amenities of Leicester, Coventry and Birmingham. Relocation expenses will be paid where appropriate.
Please write giving full details of age, experience, qualifications and current salary, quoting reference PS616801(705) to the Senior Personnel Officer, (Hinckley), British Gas, 59 Bryanston Street, London W1A 2AZ.

BRITISH GAS (704)

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Your duties will include deputising for the Shift Leaders and carrying out all the necessary operating and librarian duties in order to provide a computer service to the various users within the Authority.
You should have 3 years operational experience in a medium to large installation.
A 2 shift system is worked Monday to Friday covering the hours 07.30-23.30. There is a need for certain overtime to be performed.
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DEPARTMENT OF COMPUTER SERVICES

SENIOR APPLICATIONS PROGRAMMER

Post No. 258

SENIOR SYSTEMS PROGRAMMER

Post No. 259

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(IBM OS background)

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